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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* THOMAS L. KELLY

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Appeal 2010-001835  
Application 10/737,088  
Technology Center 3600

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Before RICHARD E. SCHAFER, JAMESON LEE, and  
SALLY GARDNER LANE, *Administrative Patent Judges*.

LEE, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

This is a decision on appeal by an Appellant under 35 U.S.C. § 134(a) from a final rejection of claims 1-31. We have jurisdiction under 35 U.S.C. § 6(b). We *affirm*.

References Relied on by the Examiner

Bennett	4,226,071	Oct. 7, 1980
Kelly	6,006,482	Dec. 28, 1999
Nurley et al. ("Nurley")	6,250,036	June 26, 2001

The Rejections on Appeal

The Examiner rejected claims 1-3, 6, 9-20, and 22-30 under 35 U.S.C. § 103(a) as unpatentable over Kelly.

The Examiner rejected claims 4 and 5 under 35 U.S.C. § 103(a) as unpatentable over Kelly and Nurley.

The Examiner rejected claims 7, 8, 21, and 31 under 35 U.S.C. § 103(a) as unpatentable over Kelly and Bennett.

The Invention

The invention relates to a hail resistant roof system including a roof deck. (Spec. 1: ¶ 0002.) Claim 1 is reproduced below (App. Br. 19 Claims App'x.):

1. A hail resistant roof system comprising:
  - a roof deck;
  - an insulation layer supported by said roof deck, wherein said insulation layer is more compressible and resilient than said roof deck;
  - a frangible energy absorbing layer supported by said insulation layer, wherein said energy absorbing layer is of a different material than said insulation layer, and
  - a waterproof membrane loose laid over said frangible energy absorbing layer.

B. ISSUES

1. Did the Examiner incorrectly determine that Kelly discloses a roof system having a waterproof membrane that is “loose laid” with respect to an energy absorbing layer?

2. Did the Examiner incorrectly determine that Kelly discloses a “wrinkle” in a waterproof membrane?

C. PRINCIPLES OF LAW

A reference must be evaluated for all it teaches and is not limited to specific embodiments. *In re Bode*, 550 F.2d 656, 661 (CCPA 1977).

A prima facie case of obviousness is established when the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art. *In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976).

D. FINDINGS AND ANALYSIS

The Examiner rejected the Appellant’s claims 1-3, 6, 9-20, and 22-30 as unpatentable over Kelly and claims 4, 5, 7, 8, 21, and 31 as unpatentable over Kelly and one of Nurley or Bennett. The Appellant argues the claims in two groupings; (1) claims 1-10, 17-23, 30, and 31, and (2) claims 11-16 and 24-29.

Claims 1-10, 17-23, 30, and 31

Claims 1, 17, 18, and 31 are independent claims. Claims 2-10, 19-23, and 30 are ultimately dependent on one of claims 1, 17, and 18. The dependent claims are argued collectively with the independent claims.

Claims 1, 17, 18, and 31 are directed to either a hail resistant roof system or a wind blown debris resistant roof system. Each of claims 1, 17, and 18 include the feature of an “energy absorbing layer.” In claim 31, the energy absorbing layer is specifically termed a “gypsum board.” (App. Br. 23 Claims App’x.) The claims each further require a “waterproof membrane” or “waterproofing membrane” which is “loose laid” over the energy absorbing layer or gypsum board. (*Id.* at 19, 21, and 23.) The dispute centers on the “loose laid” nature of the membrane. (Reply Br. 2:16-23.)<sup>1</sup>

The Examiner determined that the above-quoted feature is taught by Kelly. In particular, the Examiner determined that Kelly discloses a roof system incorporating a waterproof membrane 9 that is “loose laid” with respect to an energy absorbing layer or gypsum board 14. (Ans. p. 4.) The Appellant does not dispute that Kelly’s element 9 constitutes a waterproof membrane and element 14 forms an energy absorbing layer or gypsum board. Rather, the Appellant challenges the Examiner’s determination by assuming that the Examiner limited his rejection solely to the embodiment of Kelly’s invention as shown in Figure 30. The Appellant contends that in Figure 30, membrane 9 is not “loose laid” with respect to layer 14. According to the Appellant, a component that is “loose laid” with respect to another structure means that the component is not attached to the structure.

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<sup>1</sup> With respect to claims 17 and 18, in the Appeal Brief filed June 25, 2009, the Appellant argues additional features of those claims. However, in the Reply Brief filed October 5, 2009, the Appellant indicates that the arguments “were made in error” and “apologizes for including” those arguments. (Reply Br. 2:6-15.) The Appellant has withdrawn the arguments.

The Appellant urges that in Kelly's Figure 30, membrane 9 is shown attached to layer 14 and thus not loose laid. (Reply Br. 3:1-22.)

The Appellant's argument is unpersuasive. Although Kelly's Figure 30 is referenced in the Examiner's rejection, the rejection is not limited strictly to that embodiment to the exclusion of the other embodiments. Indeed, that is evident from the Examiner's reliance on Figures 15, 25, and 26, in explaining the rejection. (Ans. 4:16-21.) We recognize that the embodiment of Kelly's invention in Figure 30 does appear to show that in at least one instance, membrane 9 is attached to layer 14 via a screw 20. Even if that means that the Figure 30 embodiment does not show membrane 9 "loose laid" on energy absorbing layer 14, other embodiments, such as that of Figure 25, show membrane 9 unattached to layer 14. A reference must be evaluated for all that it teaches and is not limited to what is disclosed in one particular embodiment. *See In re Bode*, 550 F.2d at 661.

Kelly's Figure 25 is reproduced below:

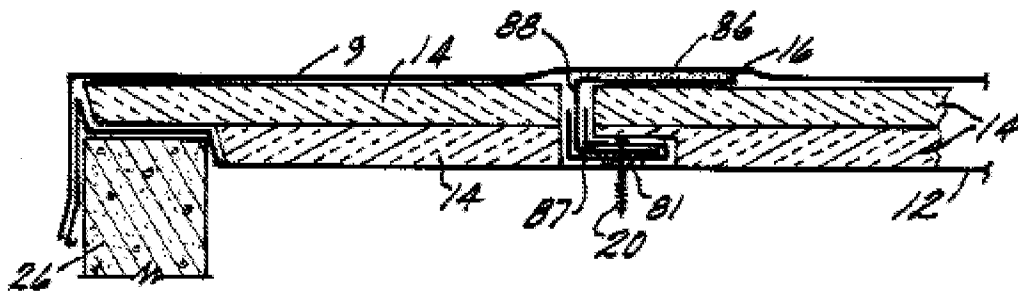


FIG. 25

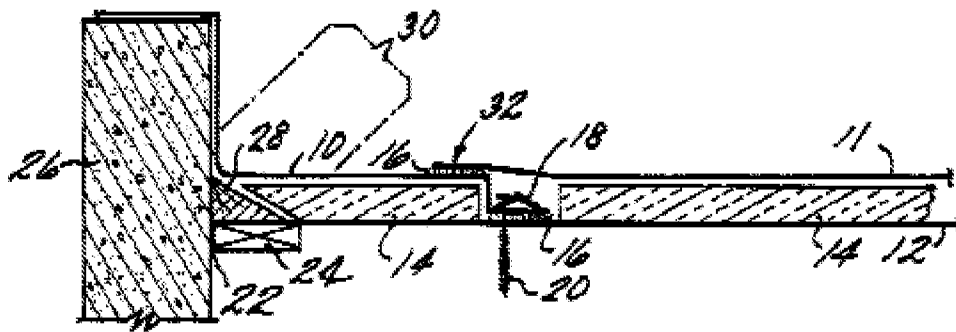
Figure 25 depicts an embodiment of a roof assembly according to Kelly's invention.

The figure above shows membrane 9 spaced from, and unattached to, layer 14. Membrane 9 is described as being attached to a c-shaped channel 88 via adhesives 16. (Kelly 10:7-25.) The channel is in turn attached to roof

substrate 12 via a screw 20. (*Id.*) The attachment of membrane 9 to some other structure, such as roof substrate 12, is immaterial in connection with its “loose laid” configuration with respect to layer 14. That is consistent with the Appellant’s assertions that its Specification describes a membrane which is loose laid with respect to an energy absorbing layer but is attached to other portions of the roof. (Reply Br. 3:11-19.) Thus, a membrane which is “loose laid” with respect to an energy absorbing layer is not precluded from attachment to some other structure. Kelly’s Figure 25 shows an embodiment of its invention in which membrane 9 is attached to roof substrate 12 but is loose laid, or unattached, with respect to energy absorbing layer 14.

Moreover, still other embodiments of Kelly also show a waterproof membrane which is loose laid with respect to an energy absorbing layer. For instance, in Figure 1, a membrane 10 is shown laid on a layer 14, which may be formed from gypsum board. (*Id.* at 5:50-56.)

Figure 1 is reproduced below:



**FIG. 1**

Figure 1 depicts a roof system according to another embodiment of Kelly’s invention.

Membrane 10 is attached to roof substrate 12 using screw 20 but is not secured to layer 14. (*Id.* at 5:57-62.) Figure 1 also illustrates a region 30

incorporating areas of membrane 10 and layer 14. Kelly describes region 30 as a “zone of instability” in which an underlying substrate should be “free to move” with respect to an overlying membrane. (*Id.* at 6:1-3.) As explained by Kelly, the “zone of instability” is an area of the roof which may be prone to roof failure. (*Id.* at 5:22-32.) In that area, allowing freedom of movement of the underlying substrate with respect to the overlying membrane is beneficial and aids in reducing the potential of damaging the membrane. (*Id.* at 5:40-44.) That benefit is specifically accomplished by making the membrane “loose laid” over the area. (*Id.*) Thus, Kelly makes explicit that it is known in the art for a waterproof membrane to be “loose laid” over an underlying energy absorbing layer.

Taking Kelly’s teachings as a whole, a person of ordinary skill in the art would have readily recognized that loose laying a waterproofing membrane over an energy absorbing layer is an available, and even beneficial, option when forming a roofing structure. The Examiner did not err in rejecting the claims as unpatentable over the prior art.

The rejection of independent claims 1, 17, 18, and 31 as unpatentable over Kelly is sustained. The patentability of dependent claims 2-10, 19-23, and 30 is not argued apart from the independent claims. The rejection of claims 2-10, 19-23, and 30 are also sustained.

#### Claims 11-16 and 24-29

Claims 12-16 and claims 25-29 are ultimately dependent on one of claims 11 and 24. Claims 12-16 and 25-29 are argued collectively with claims 11 and 24. Claims 11 and 24 are each dependent on claim 1 and each adds the following feature (App. Br. 20, 22 Claims App’x.):



wherein said membrane is installed with at least one intentional wrinkle to allow for gathering of membrane at hail impact depressions and to compensate for shrinkage of said membrane over time.

The Appellant's Figure 1 is reproduced below and illustrates an example of a "wrinkle" in a membrane:

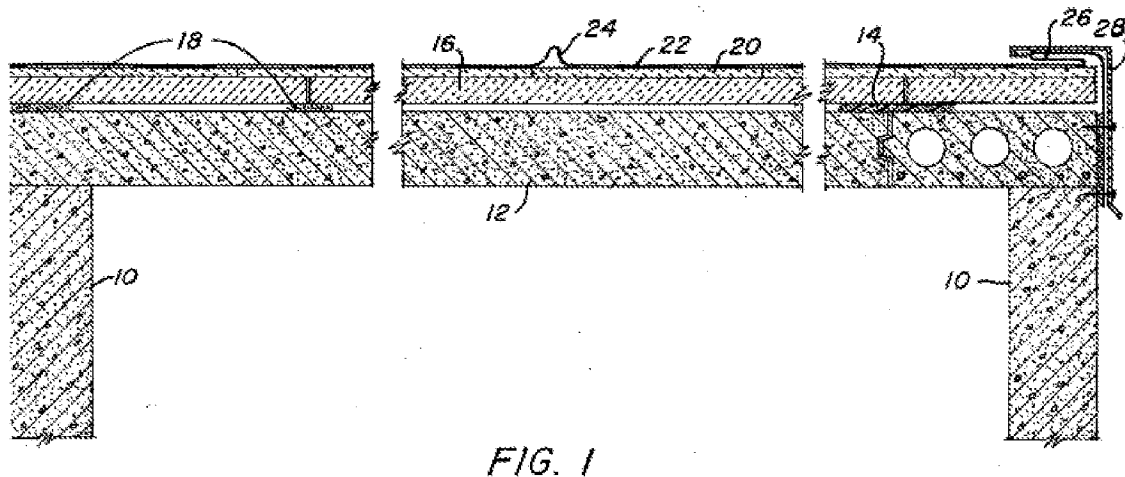
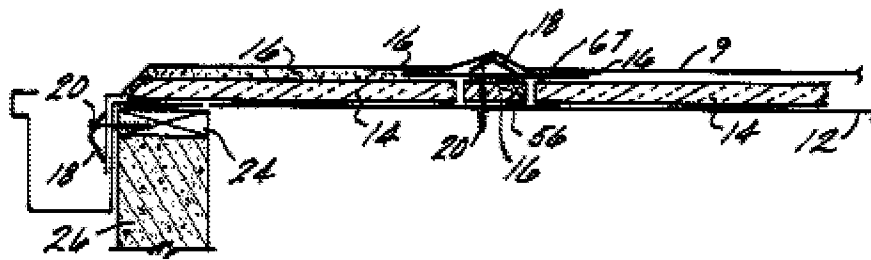


Figure 1 depicts a roof system according to the Appellant's invention.

As shown in the figure above, waterproofing membrane 22 includes "wrinkle" 24. The wrinkle is formed by gathering an excess of material along a portion of the membrane. (Spec. 4: ¶ 0016.)

The Examiner determined that Kelly shows a "wrinkle" in its membrane 9 at Figures 15, 25, and 26. (Ans. 4:15-16.) Figure 25, reproduced *supra*, illustrates a gathering or excess of material in the form of a protuberance which extends over c-shaped channel 88. Figure 15 shows a similar excess of material.

Figure 15 is reproduced below:



**FIG. 15**

Figure 15 depicts a roof system according to another embodiment of Kelly's invention.

As shown above, membrane 9 includes a portion of material which extends over an attachment component 18 and is elevated as a protuberance with respect to the membrane's flat surface. The Appellant generally contends that the above-noted structures in Kelly are not wrinkles (Reply Br. 4:4-9) but does not meaningfully explain that contention. A prima facie case of obviousness is established when the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art. *In re Rinehart*, 531 F.2d at 1051.

Here, although Kelly does not use the term "wrinkle," the similarity in appearance between the wrinkle in the Appellant's membrane and the protuberances in Kelly's membranes is notable. The Appellant submitted no declaration testimony from a technical expert to explain the basis for concluding that the structures in Kelly do not constitute wrinkles. In light of the disclosure of Kelly, we conclude that the Examiner has adequately established a prima facie case of obviousness in rejecting claims 11 and 24. The Appellant's conclusory assertion to the contrary is inadequate to overcome that prima facie case.

On this record, we sustain the Examiner's rejection of claims 11 and 24 over Kelly. The patentability of claims 12-16 and 25-29 is not argued apart from claims 11 and 24. We also sustain the rejection of claims 12-16 and 25-29.

E. CONCLUSION

1. The Examiner correctly determined that Kelly discloses a roof system having a waterproof membrane that is "loose laid" with respect to an energy absorbing layer.

2. The Examiner correctly determined that Kelly discloses a "wrinkle" in a waterproof membrane.

F. ORDER

The rejection of claims 1-3, 6, 9-20, and 22-30 under 35 U.S.C. § 103(a) as unpatentable over Kelly is affirmed.

The rejection claims 4 and 5 under 35 U.S.C. § 103(a) as unpatentable over Kelly and Nurley is affirmed.

The rejection of claims 7, 8, 21, and 31 under 35 U.S.C. § 103(a) as unpatentable over Kelly and Bennett is affirmed.

AFFIRMED

KMF